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## Industrial Rents and Land Values in the Sydney Property Market

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This study aims to analyze the performance of industrial rents and land values in the Sydney property market. In the Sydney industrial property market, no growth of the rents and marginal growth of the land values in real terms has been seen between 1976 to 1996. It means that the overall return from an investment in industrial property is achieved largely from initial yield and current rental incomes, rather than rental growth and capital appreciation. The trends of real growth of industrial rents and land values have a similar cycle, but different magnitude (a or s) of fluctuation. It is concluded that industrial rent is determined more by demand than supply side factors, while land value is determined more by supply side factors than demand side factors

### Keywords

Rents, land values, Sydney industrial property market.

### 1. Introduction

Industrial properties are emerging as a good option for property investors, especially for financial institutions. There have been few attempts to investigate the industrial property market, most of the studies focus on the performance of industrial property prices or values (Ambrose, 1990; Fehribach *et al.*, 1993; Atteberry and Rutherford, 1993; Lockwood and Rutherford, 1996). Prices, rents and land values of properties are the main

concern of the investor in occupation and development property sub-markets respectively (Keogh, 1994). Property investment appraisals must focus on the occupation and development markets in terms of a demand and supply analysis (Kim, 1996).

Tsolacos (1995) concludes from his research that industrial rents appear to be a significant driving force for industrial building projects. This means that industrial rents are the key variables in the demand analysis of an industrial property market. The property value is comprised of the land value and improvement costs using a cost approach to valuation (Boykin and Ring, 1993; Jaffe and Sirmans, 1995). As industrial building projects need relatively short delivery periods, the improvement costs vary less in the short term than do the industrial land values. This means that the industrial land values are the key variables in the supply analysis of the industrial property market. Industrial rents and land values are thus identified as important performance measurements in the industrial property market. This study explores how the industrial rents and land values have performed from 1976 to 1996 in the Sydney property market.

Section two of the paper describes sample areas and typical industrial properties. Section three discusses industrial rents and land values in the Sydney property market. Section four presents the performance of the industrial rents and land values. Conclusions are provided in section five.

## **2. Sample Areas and Typical Industrial Properties**

Since location factors and physical characteristics are part of the primary determinants of industrial property value (Lockwood and Rutherford, 1996), the sample areas and typical industrial properties were selected in terms of the location and building aspects of industrial properties when analyzing the industrial property market in Sydney.

The Australian Institute of Urban Studies (AIUS, 1975) classifies the Sydney industrial areas by sub-regional aggregation of Local Government Areas (Center, Inner, Middle, Outer, and Fringe regions), according to the distance from the CBD. As the airport and the harbor are located near the city center in Sydney, the distance from the city center is proposed as one of the main factors affecting the industrial property values in the Sydney property market.

One Local Government Area (LGA) from each sub-region according to the distance from the CBD was selected as the sample area. The developed industrial land areas are used as the selection guidelines of the sample areas. Although the rents are closely associated with the building floor areas, the

developed land areas are used as the guidelines on the assumption that floor space ratio (FSR) is generally consistent in single level industrial buildings in the Sydney property market (Cardew, 1981). The developed industrial land areas can then be adopted as a proxy measure of industrial building areas.

The sample areas were selected based on the largest sizes of developed industrial land areas, the development ratio of industrial land, the consolidations of industrial sub-areas, and the distribution of sub-regions. The South Sydney, Auburn, and Bankstown LGAs had the largest sizes of developed industrial land areas in the Center, Inner, and Middle regions respectively. These three areas had consolidations of industrial sub-areas. The Fairfield and Campbelltown LGAs had the second largest areas of developed industrial land, and relatively fewer industrial sub-areas than the Blacktown and Penrith LGAs which had the largest areas of developed industrial land in the Outer and Fringe regions respectively. In consequence, the five LGAs (South Sydney, Auburn, Bankstown, Fairfield, and Campbelltown) were selected as the sample areas in the Sydney industrial property market.

Although industrial rent is one of the key variables in this study, the distribution of floor areas on sale was adopted to determine the most common range of floor areas rather than the distribution of floor areas on lease. The floor areas on lease cannot represent the building aspects of the properties because there can be many units on lease for a particular property, but there is only one floor area on sale. In the Australian Property News, there were a total of 835 industrial properties on sale in the Sydney property market from February 1992 to February 1995. Of this total, 583 industrial properties (70%) also have information concerning the floor area. From the 583 industrial properties, 200 properties (34%) had a floor area of 501m<sup>2</sup> to 1,500m<sup>2</sup>. 112 properties (19%) had a floor area of 1,501m<sup>2</sup> and 2,500m<sup>2</sup> and 93 properties (19%) had between 2,501m<sup>2</sup> and 5,000m<sup>2</sup>. In total, 82 industrial properties (14%) had a floor area of less than 500m<sup>2</sup>. Floor areas ranging from between 501m<sup>2</sup> and 1,500m<sup>2</sup> are the most common size of industrial unit offered for sale in the Sydney property market.

Considering the building aspects of the Sydney industrial property market, the prime quality industrial properties with a floor area of approximately 1,000 square meters were selected as typical industrial properties for this study. Prime quality industrial properties usually mean modern, high wall factories or warehouses that are perceived to have good growth prospects.

### **3. Industrial Rents and Industrial Land Values**

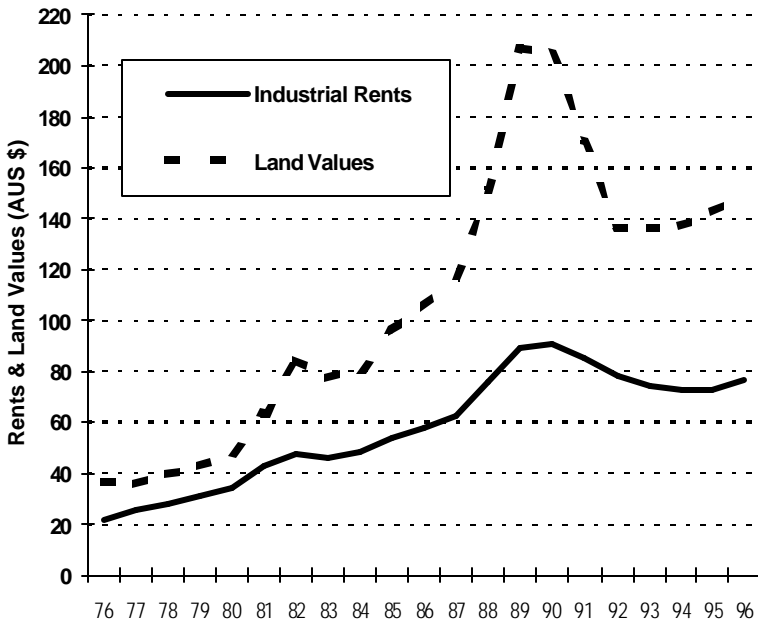
The rents and land values of typical industrial properties in the sample areas between 1976 and 1996 were collected from the New South Wales Valuer General's Office (VGO). The VGO collects industrial rents in the form of gross annual rents per square meter. These gross rents are not the mathematical average values within a particular area; they are estimates made by the valuers (VGO) of the market values at 30th June for typical industrial properties in the area.

In order to assess rents in the Sydney industrial property market, the industrial rents were calculated as a weighted average of the rents based on the proportion of the developed industrial land areas in the sub-region to which the sample area belongs. Although the rents are based on the floor areas, the proportion of developed industrial land areas instead of the total industrial building areas is used for the calculation of the industrial rents, on the assumption that the developed industrial land areas are highly correlated to the industrial building areas. Figure 1 shows the industrial rents as a weighted average in the Sydney property market for the study period.

The collected industrial land values represent the land values per square meter for the industrial land of approximately 2,000 square meters in the sample areas. Since a typical industrial property could be seen as a single story factory or warehouse with a floor area of approximately 1,000 square meters, based on floor space ratio (FSR) of 0.5, they require a land area of approximately 2,000 square meters. The collected industrial land values can then represent the land values for typical industrial properties in the Sydney property market. The industrial land value is similarly calculated as a weighted average of the land values based on the proportion of zoned industrial land area in the sub-region to which the sample area belongs. Exhibit 1 shows these industrial land values in the Sydney property market.

#### **4. The Performance of Industrial Rents and Land Values**

Hoag (1980) suggests that industrial property values are positively related to broad market changes. The changes of industrial rents and land values are then compared with the changes in the economic indicators at the national and regional levels. At the national level, this study uses the Gross Domestic Products (GDP), new capital expenditure on plant and equipment (PNE), and interest rates as the economic indicators. Building approvals and commencements in the New South Wales (NSW) and the Sydney statistical division, Consumer Price Index (CPI) and Building Price Index (BPI) in the Sydney statistical division were used as the economic indicators at the regional level.

**Figure 1: Industrial Rents and Land Values in the Sydney Property Market**

The economic indicators in the Sydney property market from 1976 to 1996 were:

*CPI*: Consumer Price Index in the Sydney statistical division as averages of the quarterly index numbers (Base: Year 1989-90 = 100) (source; Australian Bureau of Statistics; ABS)

*BPI*: Building Price Index in the Sydney statistical division on June 30 (Base: 31st December 1989 = 100) (source; Rawlinsons Australian Construction Handbook)

*GDP*: Gross Domestic Product in Australia for the financial year (at current prices) (source; ABS)

*PNE*: New capital expenditure on plant and equipment in Australia for the financial year (at current prices) (source; ABS)

*BANKBILL*: Short-term interest rate as the yield of 90 day bank bills on June of the financial year (source; Reserve Bank of Australia; RBA)

*INTEREST*: Long-term interest rate as the interest rate paid on 10 year bonds on June of the financial year (source; RBA)

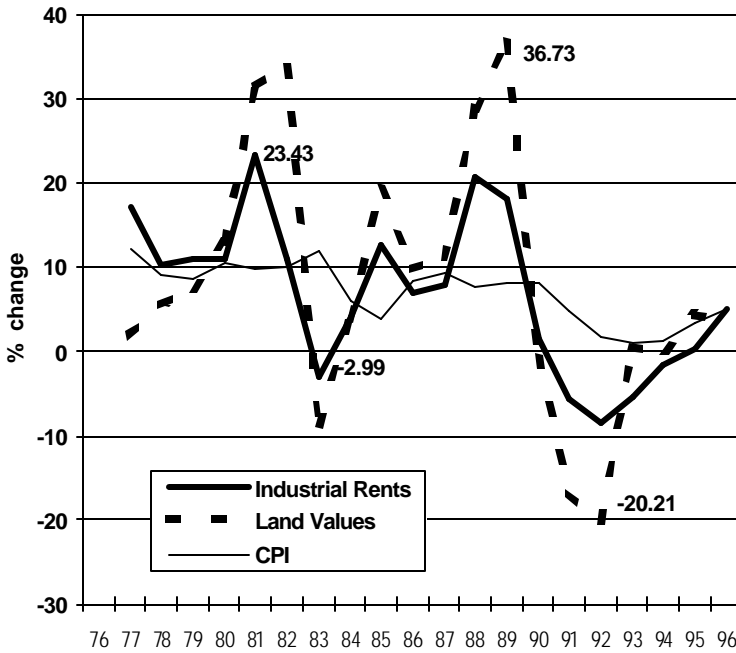
- APPR*: Values of industrial building approvals in the Sydney statistical division for the financial year (at current prices) (source; ABS)
- APPRNSW*: Values of industrial building approvals in NSW for the financial year (at current prices) (source; ABS)
- COMNSW*: Values of industrial building commencements in NSW for the financial year (at current prices) (source; ABS)

It is assumed that changes in the rents and land values of typical industrial properties may result from inflation (CPI and BPI), changes in the demand side of the economy (GDP, PNE, BANKBILL, and INTEREST), and changes in the supply side of the economy (APPR, APPRNSW, and COMNSW). (Jaffe and Sirmans, 1995)

General inflation is a rise in overall prices. Real price increases of an industrial property can be thought of as an additional increase to the general price increase that is normally represented by the CPI (Barrett and Blair, 1988:238). Figure 2 shows the annual growth rate of CPI, the industrial rents and land values in the Sydney property market from 1976 to 1996. The growth rate is based on current prices, while the real growth rate is net of the CPI growth. Figure 3 shows the real growth of the industrial rents and land values in the Sydney property market.

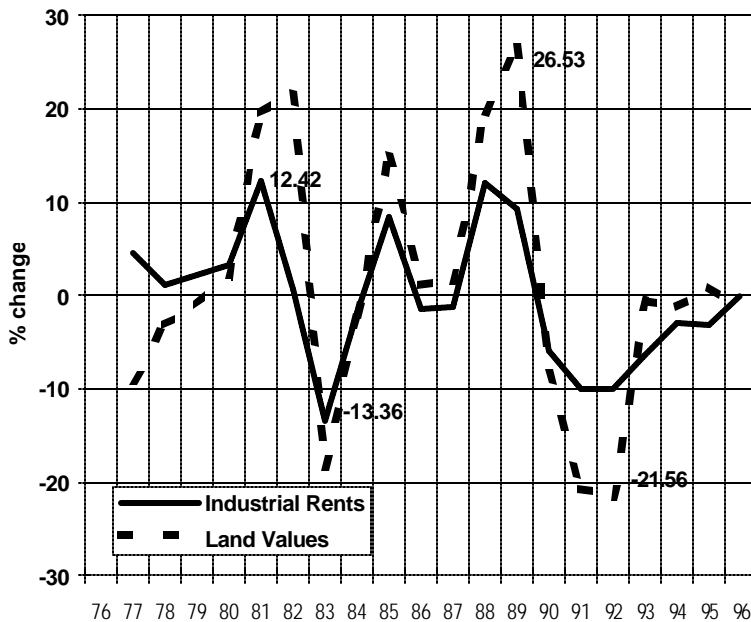
Average annual growth rates of the industrial rents and land values are 6.86 per cent and 8.26 per cent respectively. Average annual real growth rates of the industrial rents and land values are minus 0.25 per cent and 1.05 per cent respectively. This means that no growth in rents and marginal growth of the land values in real terms have been achieved for the study period in the Sydney industrial property market. This supports the argument that the overall return from industrial property investment is achieved largely from initial yield and the current rental incomes rather than rental growth and capital appreciation. It explains the higher initial yield rate for the industrial property investment than other sectors such as offices and retail outlets. For examples, the average annual income returns of industrial properties and offices in the Sydney property market from 1984 to 1996 are 9.66 per cent and 6.42 per cent respectively (Property Council of Australia, 1997). The accurate assessment of the current rental values rather than the potential rental growth, must then be the focus in the appraisal of the industrial property investment.

**Figure 2: Percentage in CPI, Industrial Rents and Land Values**



The property cycle often reflects the state of general business and housing or construction cycles. This property cycle is influenced by demand and supply factors of the economy (Boykin and Ring, 1993). The changes of the industrial rents and land values are analyzed in order to identify the industrial property cycle in the Sydney property market. As Figure 3 shows, the trends of real growth of the industrial rents and land values in the Sydney property market from 1976 to 1996 show a similarity. The industrial rents and land values have a similar frequency of the cycle, but a different degree of fluctuation. The land values fluctuate more than the rents. The real growth of the industrial rents fluctuates between 12.42 per cent and minus 13.36 per cent, while the real growth of the land values fluctuates between 26.53 per cent and minus 21.56 per cent during the study period.

**Figure 3: Real Growth of Industrial Rents and Land Values in the Sydney Property market**



In the Sydney industrial property market, the real growth of the industrial rents peaked in 1981, 1985, and 1988, while the real growth of the land values peaked in 1982, 1985, and 1989. The real growth of the industrial rents and land values in the Sydney property market had troughs in 1983, 1991, and 1992 during the study period. The peaks of the industrial land values cycle lag behind that of the industrial rents cycle, while the troughs of industrial rents and land values cycles coincide. This can be explained; the demand side of the industrial property market drives the supply side, especially in the case of the growing period of the cycle, although the use of annual data largely eliminates the potential leading role of economic factors. It also illustrates that the Sydney industrial property market may have 3 to 4 year mini cycles and a 7 to 9 year main property cycle during the study period. This is also in line with the 8 year recession cycle that is generally postulated in the national economy (Buttrose, 1995).

Table 1 shows correlations between variables in the economic factors, the industrial rents and the industrial land values. There are significant correlations between some of the variables. As Jaffe and Sirmans (1995) suggest, the industrial rents and land values have significant correlations



with inflation (CPI and BPI), the demand side of the economy (GDP and PNE), and the supply side of the economy (APPR, APPRNSW, and COMNSW). However, the rental and land values of typical industrial properties in the Sydney property market have no noticeable correlations with key interest rates, as Lockwood and Rutherford (1996) suggest. Through the analysis of the correlations, as Hoag (1980) suggests, it is concluded that the industrial rents and land values are associated with economic factors.

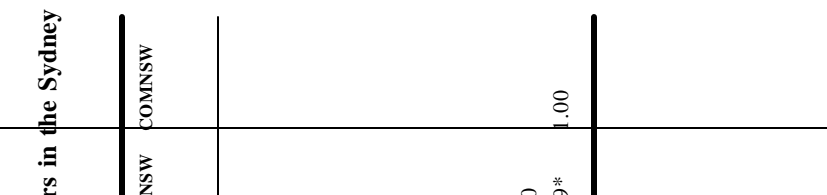
The industrial rents have higher correlation coefficients with the demand side economic variables (GDP, PNE) than the supply side (APPR, APPRNSW, and COMNSW), while the industrial land values have higher correlation coefficients with the supply side variables than the demand side. Industrial rent is determined more by demand than supply side factors, while land value is determined more by supply side factors than demand side factors. In other words, the industrial rents and land values are key variables of the revenue and cost sides of investment appraisal respectively in the industrial property market.

5. Conclusions

From 1976 to 1996, the industrial rents declined at an average annual rate of 0.25% in real terms, while the land values grew at an average annual rate of 1.05% in real terms. This means that no growth of the rents and marginal growth of the land values in real terms has been achieved in the Sydney industrial property market. This supports the argument that the overall return from industrial property investment is achieved largely from initial yield and the current rental incomes rather than rental growth and capital appreciation. The performance of the industrial rents and land values illustrates that the demand side of the industrial property market drives the supply side, especially for the growing period of the cycle. The analysis of the correlations shows that the performance of the industrial rents and land values associate with the economic factors in the market. It is concluded that the industrial rents and land values are the key information of the demand and supply sides of the industrial property market respectively.

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